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misguided aims, and to command us to prepare a sounder, a happier condition for our children and future generations, while building up, during the trend of centuries, a slowly rising foundation for a higher humanity, a more god-like race.

LEO HENDRIK BAEKELAND

THE GENERAL EDUCATION BOARD

At a meeting of the trustees of the General Education Board, held on May 24 in New York City, \$682,450 in appropriations was voted. Of this sum \$538,000 was appropriated conditionally for the endowment funds of eight colleges, \$113,000 for the furtherance of demonstration work in agriculture throughout the southern states, and \$31,450 for the salaries and expenses of special professors of secondary education in the several state universities of the south.

The appropriations voted in support of college endowments raised to \$5,177,500 the sum already spent in this direction. The seventy colleges that have received these endowments during the last four years of the board's activities have each raised sums in endowment which taken with the board's gifts aggregate \$23,670,500.

Conditional appropriations for endowment were made to these colleges in the following sums:

Cornell College, Mount Vernon, Ia., \$50,000 in addition to a like amount subscribed at the last previous meeting of the board.

De Pauw University, Greencastle, Ind., \$100,000.
Marietta College, Marietta, O., \$60,000.

Allegheny College, Meadville, Pa., \$100,000.

Central University, Danville, Ky., \$75,000.

Drake University, Des Moines, Ia., \$100,000.

Middlebury College, Middlebury, Vt., \$50,000.

Transylvania University, Lexington, Ky., \$50,000.

These eight colleges were selected from a list of twenty-nine who petitioned the board for assistance.

The sum of \$113,000 appropriated for demonstration work in agriculture in the south was made in the furtherance of the efforts which Dr. Seaman A. Knapp, of the Depart-

ment of Agriculture, is making in elevating agricultural conditions through the southern states by teaching intensive farming and the scientific methods of crop raising. In giving financial aid to this movement the General Education Board is cooperating with the department at Washington. Last year the board's contribution in this direction was \$102,000, which was divided among the various states as follows: Florida, \$5,000; Georgia, \$32,000; South Carolina, \$22,000; North Carolina, \$24,000; Virginia, \$22,000. In addition \$8,000 was spent in the administration of this enterprise.

The money voted by the board for the salaries and traveling expenses of professors of secondary education in the south is to be spent, as previous appropriations have been, in fostering the growth of high schools. The board now has one such professor attached to the state universities of Virginia, North Carolina, South Carolina, Georgia, Florida, Alabama, Mississippi, Tennessee, Louisiana, Arkansas, West Virginia and Kentucky, provision for the last of which was made at the meeting. The sole duty of these professors is to urge throughout their several fields the establishment of high schools.

The trustees of the board who attended the meeting were Frederick T. Gates, Robert C. Ogden, Walter H. Page, J. D. Rockefeller, Jr., Albert Shaw, Wallace Butterick and Starr J. Murphy, of New York; Edwin A. Alderman, president of the University of Virginia; Hollis B. Frissell, president of Hampton Institute; Henry Pratt Judson, president of the University of Chicago, and Wickliffe Rose, general agent of the Peabody Education Fund.

SCIENTIFIC NOTES AND NEWS

WITH a view of collecting material for the life of Alexander Agassiz, any one having any of his letters will confer a favor by sending them to his son, G. R. Agassiz, Museum of Comparative Zoology, Cambridge, Mass., U. S. A. The letters of any one who so wishes will be copied and the originals returned to the owner as soon as possible. If any persons are unwilling to part with the

original letters, will they kindly have copies made at the expense of G. R. Agassiz, and send them to him at their convenience?

SIR ARCHIBALD GEIKIE has been elected a foreign member of the Danish Academy of Sciences at Copenhagen.

OXFORD UNIVERSITY has conferred the degree of doctor of science on Mr. P. H. Cowell, F.R.S., and on Mr. A. C. Crommelin, both of the Royal Observatory, Greenwich. They have also been awarded jointly the Jannsen medal of the Société Astronomique de France.

PROFESSOR W. T. PORTER, of Harvard University, has been elected a corresponding member of the Royal Society of Physicians in Vienna.

THE University of Edinburgh has conferred its doctorate of laws on Commander Robert E. Peary.

DR. OTTO KLOTZ and Mr. J. S. Plaskett have been elected fellows of the Royal Society of Canada.

DR. ALFRED M. TOZZER, instructor in anthropology at Harvard University, and Mr. R. E. Merwin have returned from an expedition to British Guatemala and Honduras. They bring back a collection of antiquities from the four ruined cities which they discovered during the winter's work, and also a collection of entomological specimens for the Museum of Comparative Zoology.

DR. PHILIP P. CALVERT, assistant professor of zoology in the University of Pennsylvania, and Mrs. Calvert arrived in Philadelphia on May 17, from Costa Rica, after a year's residence in that country. They were in Cartago, their headquarters, at the time of the earthquake of May 4, which totally destroyed that town, but escaped unhurt. A brick partition wall fell into the room in which they were sitting, burying and destroying the living insect larvæ which were in rearing, some of the experiments having run for eleven months. On the following day they were able to recover from the ruins nearly all their other collections, notes, photographs, instruments, etc., and later to bring them home in safety. Many data on the seasonal distribution,

larval forms and habits of Costa Rican Odonata (the principal objects of their investigations) have been secured.

DR. J. W. SPENCER sailed on the *Hellig Olaf* to spend the summer in Norway, to continue physiographic researches, commenced during earlier visits to that country. He will also attend the International Congress of Geologists in Stockholm.

DR. M. P. RAVENEL, professor of bacteriology, will represent the University of Wisconsin at the centennial celebration of the University of Berlin from October 10 to 13. Dr. Ravenel is also American delegate to the International Conference on Tuberculosis at Berlin in October, and the International Congress on Alimentary Hygiene and the Rational Feeding of Man, in Belgium.

PROFESSOR G. F. SWAIN, of Harvard University, attended the dedication of the Carnegie Engineering Building at Union University, Schenectady, N. Y., and delivered an address on "Limitations of Efficiency in Engineering Education."

ON May 16, Dr. E. L. Hewett lectured before the University of Colorado Scientific Society at Boulder, on his recent work on the ancient monuments at Copan in Honduras and Quirigua in Guatemala. He has been able to determine the order of development of the art, his results according perfectly with the dates worked out independently from the glyphs by his colleague Mr. Morley.

THE Croonian lecture of the Royal Society was delivered on May 26, by Dr. G. Klebs, professor of botany at the University of Halle, his subject being "Alterations of the Development and Forms of Plants as a Result of Environment."

DR. GEORGE FREDERIC BARKER, emeritus professor of physics in the University of Pennsylvania, died in Philadelphia on May 24, at the age of seventy-five years.

PROFESSOR WILLIAM P. BLAKE, emeritus professor of metallurgy, geology and mining and director of the School of Mines of the University of Arizona and territorial geologist, has died at the age of eighty-four years.

PROFESSOR FRANKLIN C. ROBINSON, of Bowdoin College and the Medical School of Maine, died on May 25. He had been professor of chemistry in these institutions since his graduation in 1873. He was a member of the American Chemical Society, the Society of Chemical Industry, a fellow of the American Association for the Advancement of Science, member of the Maine State Board of Health, chairman of the Maine State Survey Commission, and ex-president of the American Public Health Association.

ROBERT H. GORDON, long interested in the geology of western Maryland and the donor of extensive collections of the finely preserved Lower Devonian fossils of this region to the U. S. National Museum and to Yale University, died on May 10, at the age of fifty-eight years.

MR. W. R. HEAD, for many years a collector and student of Paleozoic sponges, died at his residence in Chicago on May 10, at the age of eighty-one years.

DR. ROBERT KOCH, professor of hygiene in the University of Berlin, died at Baden-Baden on May 27.

THE well-known city engineer and paleontologist of Reval, Russia, August von Mickwitz, died on April 20 last at the age of sixty-one years. His best known work in paleontology treats of the Upper Cambrian Obolidae and Lingulidae of western Russia.

By arrangement between the Bermuda Natural History Society and Harvard University the Bermuda Biological Station for Research will be open this summer for about six weeks beginning the middle of June, under conditions substantially like those of previous years. For particulars application should be made to Professor E. L. Mark, 109 Irving St., Cambridge, Mass.

IN 1906, on recommendation of the then Italian minister of public instruction Boselli, there was created by royal decree the Comitato Nazionale per la Storia del Risorgimento. In 1909 this committee, consisting of nineteen members, was organized, with Senator Finali, president of the Court of Cassa-

tion, as its head. Among its members are Ernesto Nathan, syndic of Rome; Professors d'Ancona, Bosselli, Martini, Abba, Pitré and Casini; Marquis Emilio Visconti-Venosta, and Car. H. Nelson Gay, formerly of Boston, but for many years a resident of Rome, and the leading authority on the bibliography of the Risorgimento. The objects of the committee are (1) to establish in Rome, in the monument to Victor Emmanuel, a museum, archives and a national library of the Risorgimento; (2) to promote Risorgimento museum and archives in the chief towns and cities of Italy; (3) to prepare and issue a bibliography; (4) to publish documents, and (5) to direct special works for illustrating the most important material. The committee already possesses many invaluable collections—the Crispi Papers, the Jessie White Mario Papers, Mazzini manuscripts, the Pepe correspondence, etc.; and when the new quarters are ready, there may be transferred to them the vast collections of the National Library at Rome. At a recent meeting, the committee chose a few foreign corresponding members, including George M. Trevelyan (England), Professors Harnack and Delbrück (Germany) and William Roscoe Thayer (United States).

THE Smithsonian Institution has published a "Bibliography of Aeronautics," which has been issued as volume 55 of the Smithsonian Miscellaneous Collections. Nearly one thousand pages are required to present the 13,500 references which have been arranged alphabetically by authors, subjects and titles covering the subject down to July, 1909. Mr. Paul Brockett, the assistant librarian of the institution, is the compiler, and in his introduction he reviews the long association of the institution with aeronautics, pointing out that as early as 1861 assistance was solicited for carrying out experiments to cross the Atlantic by means of a balloon. Two years later there were published by the institution two papers on the general subject of aeronautics and since then thirty-five publications on various phases of the subject have been issued. In greater detail Mr. Brockett reviews the con-

tributions of Secretary Langley. He tells of the publication of his "Experiments in Aerodynamics" in 1891 and then of his further technical contribution on "The Internal Work of the Wind" in 1898. Very briefly is the story told of Langley's two flights with heavier-than-air machines.

SOME time ago an International Commission for the study of the effect of high altitude and solar radiation on medical and biological conditions was constituted, and Professor Pannwitz, of Charlottenburg was appointed president. We learn from the *British Medical Journal* that the commission has selected the Peak of Teneriffe as the site of its investigations. In view of the favorable conditions obtaining in the Canary Islands, and especially at the spot chosen, it was felt that it would be wise to study meteorological and astronomical as well as biological and medical problems. Professor Hergesell, the president of the international commission for scientific aerology, joined in the project, and when the observatory on the Peak of Teneriffe was opened, the German emperor presented the commission with a transportable house. On March 12 Professor Pannwitz started from Southampton with the members of the expedition, including Professor Barcroft and Dr. Douglas, of Cambridge, Professor Zuntz, of Berlin, and Dr. Neuberg, Dr. J. Mascat, Dr. Plasse (France), and Professor Daring and Professor H. von Schrötter, of Austria. The program includes the study of the effect of solar radiation (heliotherapy) in the treatment of pathological conditions; the continuation of the researches on biological processes at high altitudes, commenced by Professor Zuntz on Mont Rosa; and further observation of Halley's comet. A certain amount of preliminary work in meteorology has already been undertaken by Professor Hergesell and his assistants, and in this work the Prince of Monaco has materially assisted by lending his yacht, and by supporting the observatory in many ways. The Peak of Teneriffe offers special advantages for astronomical observations. The clear atmosphere at the peak, which is situated well above the cloud line and

stands some 7,000 feet above the sea, renders the observatory a suitable place for studying the comet. The Spanish government has shown its interest by undertaking to extend the observatory, and has provided it with telegraphic communication.

PLANS have been adopted for the conduct of the Phipps Institute, now a department of the University of Pennsylvania, which we quote from the *Journal* of the American Medical Association. The work has been planned by a committee of physicians, comprising Drs. John H. Musser, David L. Edsall, Alexander C. Abbott and Charles H. Frazier. As soon as possible the new building will be erected at Seventh and Lombard Streets, the site first bought by Mr. Henry Phipps, and architects are now at work on the plans and specifications. It will be the most complete hospital for the treatment of consumptive patients in the United States. The trustees have elected the following men to direct the work of the institution: Director of the laboratory, Dr. Paul Lewis; director of the clinical department, Dr. Henry R. M. Landis, and director of the sociologic department, Alexander Wilson, who will be superintendent of the institute and with the director of the laboratory will devote all his time to the work. It has been decided to appropriate \$5,000 for the maintenance in the laboratory, work the first year and \$1,800 for the clinical department. For the sociologic department the first appropriations will include \$500 for an assistant to the superintendent; \$2,300 for out-patient nurses; \$1,200 for educational work, and \$3,900 for emergency and special expenses. The institute will be governed by a board of directors composed of eight members, of which Provost C. C. Harrison, of the university, will be president ex-officio. The other members included the three heads of the institute and the following: Dr. John H. Musser, for medical council; Dr. Robert G. LeConte, of the board of trustees; George E. Gordon, representing the donor, and Dr. Charles J. Hatfield, of the Pennsylvania Society for the Prevention of Tuberculosis. Members of the advisory council, who

will hold a meeting once a year, are as follows: Pathological Department—Dr. William H. Welch, Baltimore; Dr. Theobald Smith, Boston; Dr. H. Gideon Wells, Chicago; Dr. Simon Flexner, New York. Clinical Department—Dr. James A. Miller, New York; Dr. Lawrason Brown, Saranac Lake, N. Y.; Dr. Joseph Pratt, Boston; Henry Baird Favill, Chicago. Sociologic Department—Dr. Samuel McC. Lindsay, New York; William H. Baldwin, Washington; Dr. Herman M. Biggs, New York; Dr. Samuel G. Dixon, Harrisburg, Pa.

UNIVERSITY AND EDUCATIONAL NEWS

ANNOUNCEMENT is made of the receipt by Western Reserve University of a gift of \$250,000 by Mr. H. M. Hanna, as an addition to the endowment of the medical department. The income from this gift is to be largely used in the clinical departments to enable the school to put these departments upon a university basis.

MR. J. OGDEN ARMOUR has made a gift of \$70,000 to the Armour Institute of Technology.

DR. ROSCOE POUND, who has successively held chairs of law at the University of Nebraska, Northwestern University and the University of Chicago, has been appointed Story professor of law in Harvard University. Dr. Pound was for many years director of the Nebraska Botanical Survey and is well known for his contributions to botany.

PROFESSOR ALEXANDER S. LANGSDORF has been appointed dean of the school of engineering of Washington University, to succeed Professor Calvin M. Woodward. Professor Langsdorf will continue in active charge of the Department of Electrical Engineering.

At the annual meeting of the regents of the University of Nebraska Adjunct Professor Walker and Adjunct Professor Pool, of the department of botany, were promoted, with the title of assistant professor of botany. Professor Pool was made curator of the university herbarium, also, and to Professor Walker's

duties were added those of keeper of the botanical library.

At Cornell University instructors have been appointed as follows: M. M. Goldberg, in physics (promoted); Fred MacAllister, in botany; H. W. Mayes and M. H. Givens, in physiology and biochemistry (promoted).

DR. M. VERWORN, professor of physiology at the University of Göttingen has been called to Bonn to succeed the late Professor Pfüger.

DISCUSSION AND CORRESPONDENCE

ON THE APPARENT SINKING OF SURFACE ICE IN LAKES

TO THE EDITOR OF SCIENCE: During the disintegration of the surface ice in a lake in the spring it is a matter of common observation by the natives that the ice suddenly appears to sink, the surface of the lake becoming clear in a few hours. The explanation of this apparent anomaly was difficult to find until it became clear to me as a result of a careful study of the effect of water temperatures in the St. Lawrence River on the growth and decay of ice. The ice sheet which forms on the surface of quiet water becomes thicker on the underside only by the conduction of heat. The total thickness of the ice which will form in a single winter depends not only on the mean air temperature measured in degrees, but on the mean water temperature measured in thousandths of a degree above or below the freezing point.

From measurements made with my special micro-thermometer I have found that the temperature of the water just under the surface ice in a lake or deep river is usually one or two hundredths of a degree above the freezing point, due to the lower layers of warmer water.

In the spring this temperature is considerably higher and the effect of the warmer underwater rapidly honeycombs the ice, thus assisting the sun when the surface snow is absent. In a flowing river the effect of wind and current is to loosen the ice and it is soon carried down by the stream. In a quiet lake